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INTEGRATED R&D TO VALIDATE INNOVATIVE EMERGENCY HEAT REMOVAL SYSTEM FOR BN-1200 REACTOR

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Decay heat removal from BN-1200 to atmospheric air is performed using passive DHRS. Several innovative solutions are applied during the DHRS development:
- hydraulic connection of the decay heat exchanger (DHX) with reactor high pressure plenum, installation of check valve at DHX outlet;
- application of slide valve of air heat exchanger with passive elements;
- natural circulation in all DHRS circuits.
Set of experimental research is performed at facilities with water and sodium:
- hydraulic testing of several options of DHX check valve are performed using scaled-down models;
- main characteristics of the check valve are determined using full-scale model;
- in the closed position of check valve diffusion like process was investigated (long-term testing);
- experimental studies of thermohydraulic characteristics are performed using scaled-down reactor model with one DHRS loop.
Integrated computational validation of DHRS effectiveness is performed using new generation code SOCRAT-BN.

Country/Int. Organization

Russia/JSC “Afrikantov OKBM”

Author: Mr PAKHOLKOV, Vasiliy (JSC “Afrikantov OKBM”)

Presenter: Mr PAKHOLKOV, Vasiliy (JSC “Afrikantov OKBM”)

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