

EXPERIMENTAL TEST FACILITY TO TEST A PROTOTYPE OF THE AIR HEAT EXCHANGER GATE FOR THE ADVANCED BN REACTOR PLANT. DESIGN AND CONSTRUCTION ITEMS

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To enhance safety, an emergency heat removal system (EHRS) is provided as a part of the reactor plant. One of the main elements of this system is an air heat exchanger (AHX), equipped with a device for air flowrate control with passive opening principle, which is a gate.

To ensure operability of this gate, high-temperature experimental test facility was developed and manufactured. This test facility permits to test the gate under operation conditions similar to the standard ones (temperature higher than 500°C).

A gate prototype is installed on a special box (3000 × 3000 mm) located on the site.

For uniform heating of air in the gate box equipped with an electric heating system of 170 kW electric power; and a special slot gap with optimum space provided by a spacing system is made.

To arrange flowrate, cold air supply and hot air discharge, air duct paths with required valves and a blower (fan) were designed. Because of the high temperature, the air circuit was unclosed; air duct outlet with special flare emission beyond the bounds of the building was arranged.

High-temperature thermal insulation is used at the test facility to ensure safe operation.

An information-and-measuring system was designed for on-line reporting on test facility parameters (temperature, pressure, flowrate, etc.).

Considering large overall dimensions and a high-altitude location of the test facility, special process tooling was developed in the course of test facility construction.

A process was developed and process tooling was manufactured to provide the slot gap in the course of manufacture.

A process was developed to simplify thermal insulation installation.

Now, the gate is tested at the made experimental test facility.

Country/Int. organization

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