System of the boric acid solution preparation QCA

System of the boric acid solution preparation provides the boric acid solution preparation for initial filling of the primary circuit and ECCS tanks. Boric acid solutions are prepared by dissolving of boric acid with ^{10}B enrichment at least 19,5% (natural ratio).

QCA system provides preparation and supply:

- boric acid solution with concentration 16–20 g/dm^3 for starting filling of the primary circuit;
- boric acid solution with concentration 16–20 g/dm^3 to the system of low concentration boric water storage tank;
- boric acid solution with concentration 39,5–44,5 g/dm^3 to the system of high concentration boric water storage tank;
- boric acid solution for sprinkler system: concentration of boric acid 39,5–44,5 g/dm^3, concentration of potassium ions 100–150 g/dm^3, concentration of hydrazine 10–15 g/dm^3;
- boric acid solution for system of defection fuel assemblies detection with purpose to hold the test on impermeability of fuel element shells.

QCA system works in normal NPP operational regime only.

Boric acid solution preparation is carried out in the apparatus with a mixing device. Solution is heated to 40°C for better dissolving in the mixing apparatus. The prepared boric acid solution with concentrations 39,5–44,5 g/dm^3 and 16–20 g/dm^3 are supplied to the respective tanks.