**Brief description of RAMEK design-basis code**

**1. Purpose:** RAMEK is designed for carrying out of the pipelines and equipment metal erosion-corrosion rate calculation of the VVER NPP power units secondary circuit condensate feed train;

**2. Field of application:** RAMEK allows for influence of metal chemical composition, medium temperature, average flow rate, configuration of the shaped elements and the pipeline internal diameter, values of water chemistry parameters (рН index, oxygen concentration) upon erosion-corrosion rate.

RAMEK enables to calculate erosion-corrosion rate and isolate the thinnest section of different configuration elements including linear section, bend, T-fitting, taper considering flow part configuration of upstream sections.

**3. Calculation methods information implemented in RAMEK**

In RAMEK empirical dependences are used which describe the following interlinked stages of metal, oxide, and medium flow interrelation:

- electrochemical reaction on metal-oxide borderline;

- corrosion products diffusion through oxide layer interstices;

- corrosion products mass transfer from the oxide surface into the flow.

While calculating erosion-corrosion rate, values from geometrical ratio matrix correspondent to the element under consideration geometry and type of the upstream section.

**4. RAMEK has been certified at the Rostechnadzor**

Since 2009 RAMEK has been successfully used at all Russian VVER NPP, it is employed for amendment of branch standard programs of the secondary circuit pipelines and equipment elements in-service inspection, for calculation-experimental detection of the pipelines severe thinning-out risk group elements, including detection at formation and updating of NPP personnel assistance software packages related to erosion-corrosion problem, as well as at inspection and detection of emergency erosion-corrosion destructions and NPP power units operating circuit unsealing causes.