Modernization of Nuclear Power Plant V2 Bohunice in Slovak Republic

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The main goal and priority of NPP V2 modernisation programme is to increase safety and reliability of the operation, but also to create conditions for extension of the operating life and economy improvement of NPP V2 operation.

NPP V2 units in Jaslovske Bohunice were commissioned in the year 1984 and 1985.

In the year 1997, management of Slovenske Elektrárne approved goals of modernisation programme and safety increasing of NPP V2. At modernisation programme defining, there were taken into consideration results of safety assessment and recommendations for improvement of NPP with VVER 440/V213 processed within the projects IAEA, WANO, VUJE and the other organisations which have had experiences with the operation of NPP with VVER reactors (basic documents: Safety report NPP V2 after 10 years of operation, VUJE, 1993, Safety issue and their ranking for nuclear power plants WWER 440/V213 type, IAEA, 1996, Safety improvements of NPP V2 and design of their solution, VUJE, 1997).

Detail range, content and schedule of programme implementation were elaborated by VUJE in the year 2001. VUJE worked out solution designs into the level of project requirements (Conceptual Design) in the document: “Safety concept for modernisation and safety increasing of NPP V2”

Modernisation works are implemented mainly in I&C and electro part, works in nuclear systems and the civil part are implemented in smaller range. Implementation works in modernisation project are realized mainly during planned units outages for refuelling.

VUJE as the general designer provides elaboration of design documentation, safety documentation; support of general contractor and it is responsible for overall coordination and functionality of safety I&C systems during the whole period of project.

Modernization tasks in very broad range of activities for unit 3 were completely implemented in 2007. Functional tests of RTS, ESFAS, neutron flux measurement and RLS confirmed fulfilment of project requirements and the unit preparedness for reliable operation.

The modernization project for NPP V2 will be finished 2008 and NPP V2 will continue in very safety and reliable operation.

Keywords: nuclear power plant, modernization, VVER, safety