

Serbia: Revitalization of Unit A2 at HPP Djerdap 1

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First megawatts of the revitalized unit A2

The new unit will undergo a full set of tests, first idle, then live, and finally handed over to the EPS dispatching division

All assembly works under the fifth revitalization phase of unit A2 of the first Djerdap hydropower plant have been completed, Radmilo Nikolic said, director of the HPP Djerdap Branch.

Unit 2 was stopped on 3 September last year, after 47 years, eight months and 15 days of operation (331,809 hours) and 46,388 GWh of electricity generated. In the past 400 days, equipment was dismantled, the discharge structure was upgraded, the old equipment repaired, and installation completed. Power plant employees and all participants in this project have once again affirmed their high professionalism and respect for this plant.

Immense efforts were invested. Works were conducted day and night, Saturdays, Sundays and public holidays. The scale of this job is illustrated by the fact that 1,300 tons of rotating and 950 tons of static equipment have been dismantled and equal amount re-installed. Some parts are measured in hundreds of tons (main generator rotor weighs 610 tons), all of them have undergone rigorous quality control by professional services and finally installed, with a precision measured by one hundredth of a millimetre.

Runner, shaft, main and auxiliary rotor with ancillary parts weigh some 1,300 tons. This is an assembly producing 71.3 revolutions per minute, a complex structure that is expected to operate more than 300 days a year and generate about one billion kilowatt-hours of energy.

In the coming period, the unit will undergo acceptance tests (Contractor - Silovie Masini, Investor - EPS). A committee composed of 13 experts from HPP Djerdap 1, equipment supplier and contractor - Russian factory Silovie Masini and the Nikola Tesla Institute is tasked with reviewing the technical documentation drafted during the preparation of new, revitalization of old parts, construction works, equipment mounting, adjustment and testing of equipment and mechanisms. The Committee will develop and agree a plan and program of acceptance tests, and finally confirm operational readiness of the unit. In practice, this means that the unit will undergo a full set of tests, first idle, then live, and finally handed over to the EPS dispatching division.

- For now, everything is going as planned. The upstream and downstream overhaul gates have been removed. A pre-turbine rack was mounted on the headrace structure. The first three-hour mechanical rotation went as planned. On 24 October, the generator produced the



first megawatts of electricity. All this is a standard procedure for a revitalized unit, certifying the high quality of work, Nikolic says.

Profit

Revitalization of Unit A5 of HPP Djerdap 1 increased its capacity by 105 megawatts compared to the situation before 2009 when the revitalization started. Unit capacity is increased by 10 percent, or 21 megawatts per generator, which in practice means that when all units have been revitalized, power plant capacity will be higher by 126 megawatts. In addition to capacity, efficiency and reliability levels have also been increased.

Source: EPS Energija