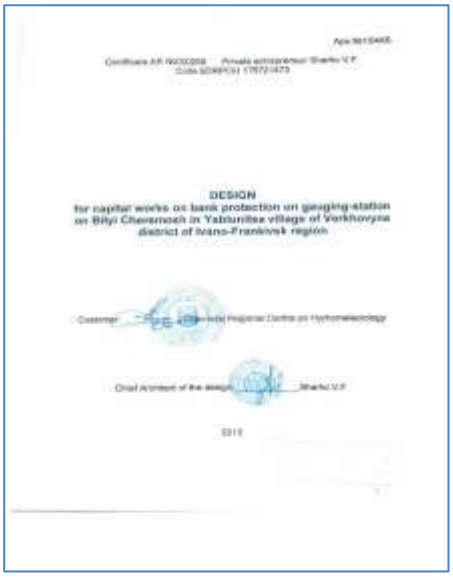
Newsletter 4 - Facts in EAST AVERT Project

Joint Operational Programme Romania-Ukraine-Republic of Moldova 2007-2013

The trilateral project **"The prevention and protection against floods in the upper Siret and Prut River Basins, through the implementation of a modern monitoring system with automatic stations - EAST AVERT",** cod **966,** funded by the **Joint Operational Programme Romania - Ukraine - Republic of Moldova,** European Neighborhood and Partnership Instrument (**ENPI**)

1. In frame of large-scale project «**The prevention and protection against floods in upper Prut and Siret river basins through the implementation of modern monitoring system with automatic stations – EAST AVERT**» MIS ETC 966, one important foreseen objective was construction works on Ukrainian part for arrangement places of hydrological posts installment (part of automatic stations network) and for bank protection, and, also, rehabilitation works on Moldavian and Romanian sides of Stânca Costești dam.

For these works, the Feasibility and EIA studies elaboration and technical design preparation were fulfilled before the start-up of the project by grant approval (September-November 2013).



DESIGN

for capital works on bank protection on gauging-station on Bilyi Cheremosh in Yabluntsa village of Verkhovyna district of Ivano-Frankivsk region

2. **Phase 1 - works contracting phase.** Although the Activity 1 (Feasibility and EIA realization and approval) was finalized before the Grant Contract signature, some deviations and needs of changes appeared at the initial stage of implementation of the project. Due to Ukrainian legislative changes in the construction sphere, recalculation of the technical project of Partner 6 from State Building Standards (SBS D.1.1-1-2000) to State Standards in Building (DSTU B D.1.1-1:2013) was necessary. This relies in a delay of starting the construction works procurement on Ukrainian side after the approval of Addendum no. 1 to the Grant Contract (revision of Annex I concerning modifications of the technical project section of Partner 6 and Partner 7 in the Grant Contract).

The signature of Addendum no. 1 in December 2014, related to an important delay for this specific technical activity.

In connection to the fact from Ukraine already pointed above, the procurement procedure for construction works of automatic stations was affected and has been held several times.

Gallery view - Stânca Costești dam

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Moreover, in both countries, Romania and Republic of Moldova, the acquisition process for concluding the contracts for Stânca Costești dam rehabilitation took very long time, more than initial estimation (expectation) and works had started at the end of 20I4 (in August on Romanian side and in November on Moldavian side).

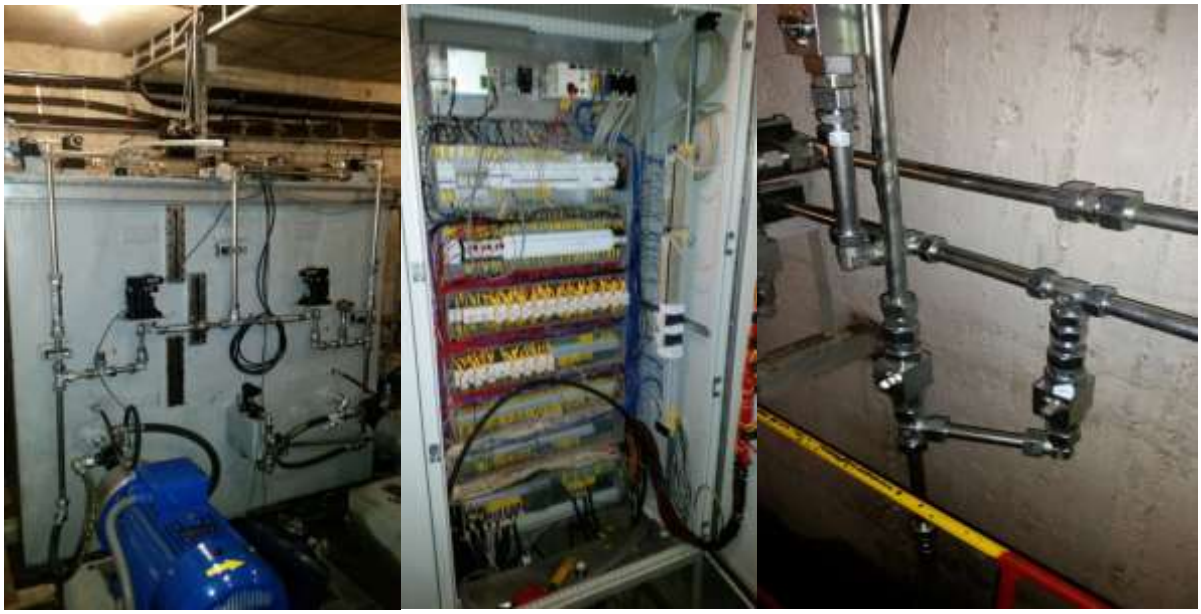
3. **In Phase 2 – works development.** Starting with 2015, were developed construction works for hydrological posts arrangements & bank protection in Ukraine and for Stânca Costești dam rehabilitation in Romania and Rep. of Moldova.

After starting the works, project partners, due to the real on-site situation and technical experts' judgement/recommendations, found necessary to amend the initial Feasibility Study by including other supplementary works, in order to secure the already realized ones. Consequently, in the period 2015 – 2016 were initiated several Addendums for modification and up-dating the FS provisions.

It should be mention that all construction works were surveyed by the technical specialized supervision in all their stages.

Synthetizing:

- On 13 of August 13, 2014 started on Romanian side the rehabilitation execution, according to the project "Placing under safety conditions and rehabilitation of the developments at the Stânca Costesti hydraulic engineering complex, Botosani County", namely rehabilitation of the hydromechanical & electric equipment at the high water outlet, rehabilitation of the hydromechanical equipment from the large water discharger, rehabilitation of the information system, execution of automation and control of sluice, auxiliary electrical lighting and new drain, facilities (earth ground and ground connection), electrical installation part of hydraulic actuating, and electric power cable replacement.



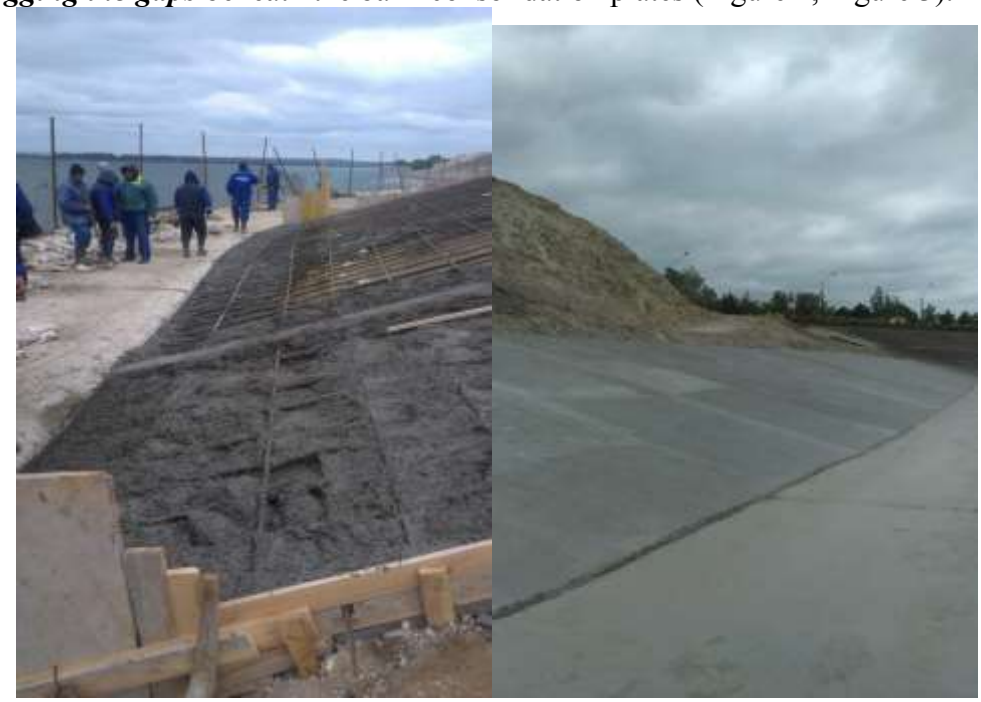
- On Moldavian side, Partner 5 – Apele Moldovei Agency contracted and developed (i) rehabilitation of the main dam and old quarry; (ii) rehabilitation of the information system and the tracking of the construction behavior, and (iii) consolidation work of the slopes.

The riverbank consolidation works included:

- ✓ ***slope reduction and riverbank consolidation*** of two sectors of the reefs above the 93.5 m elevation; sealing joints between plates (Figure 1);

Figure 1. Reducing the slope and bank consolidation of two sectors of the reefs

- ✓ ***Clogging the gaps*** beneath the bank consolidation plates (Figure 2, Figure 3).



(Figure 2) Reinstalling joints between plates (Figure 3)

- ✓ ***Joints rehabilitation.*** Within the project the joints were changed in the range of 84.5 ÷ 102.5. The cleaned joints were filled to the bottom with bitumen mattresses, top with bitumen-rubber mixture. For the new consolidation sectors, the same technical solutions were applied. In order to avoid the discharge of particulate matter during the passage of the water waves, the laying of reinforced concrete tiles under the joints was carried out. Summation indices on joining are the following: length of joints, which have been rehabilitated – 8 880 m; new joints - 1 200 m.
- ✓ ***Closure of the voids beneath the riverbank reinforcement plates.*** The filling of the gaps under consolidation has been executed over the entire length of consolidation in the range 84.5 ÷ 93, 5 m, that is, up to the berm, in the area threatened by the greatest action of the waves of water. According to the project, gaps with cement and sand mortar were filled with holes drilled from both sides of the joints. The length of the joints under which the fillings were filled - 4 370 m. The volume of cement mortar and sand for closing of voids under the plates - 1510 m3.

Also, at Costeşti-Stânca, on Moldavian side, a Dispatch was equipped with advanced technique set up to analyze the dam level information (received from upstream automated stations – from Ukraine). The dam was equipped with a multitude of level transducers that provide real-time data about the dam status. The processing and transmission of data is done by a central server unit with specialized software.

The system (water level monitoring) has the capability to monitor 144 analogue measurement points, but only 69 inputs are currently used: 57 points with hydrostatic level sensors installed in drillings located in the dam area; 2 measuring points in the dam gallery where pressure transducers have been installed. Due to the size of the monitorized area, the sensors have been grouped into 9 zones.

- In the same period, Partner 6 (Dnister-Prut Basin Department of Water Resources, Ukraine) signed the contract for construction of automatic stations with PJSC "Bankomzvjazok", construction works & bank protection were begun and implemented. 770 m of bank strengthenings were constructed by the method of arranging gabion boxes to protect the automated station.

Considering achieved project objective of the, it generally considered by waters authorities and stakeholders from the three involved countries that EAST AVERT Project contributes substantially to increasing the secure functionality of the dam and extension of the protected area during extreme floods events. The project is an example of enhanced management of European funds.

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